	Application No.	Applicant(s)
Notice of Allowability	10/700,140	GOLDSTEIN ET AL.
	Examiner	Art Unit	
	Tim Bonura	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the examiner's admendment and interview on 12/18/2006*.

2. ☒ The allowed claim(s) is/are *42, 44-49, 51-53*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

       Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 11/03/03

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *12/18/06* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

2.   Authorization for this examiner's amendment was given in a telephone interview with

Richard Stockey on 12/18/2006.

3.   The application has been amended as follows:

        a.   Regarding claim 42, the claim shall read as follows (with annotation):

A method of protecting computer data, said method comprising the steps of: acquiring a

first state snapshot S1 of a first data volume consistent state at a time t1; acquiring a

second state snapshot S2 of a second data volume consistent state at a time t2 > t1;

generating a first precedent snapshot difference list S21 comprising an identification of

data blocks of said first state snapshot S1 differing from data blocks in said second state

snapshot S2; creating a first precedent backup B21 by copying from said first state

snapshot S1 data blocks identified in said first precedent snapshot difference list S21,

said first precedent backup B21 further comprising said first precedent snapshot

difference list S21; utilizing the first precedent backup B21 and the first precedent

snapshot difference list S21 to recover the first state snapshot S1 following its deletion;

acquiring a third state snapshot S3 of a third data volume consistent state at a time t3 >

t2; generating a second precedent snapshot difference list S32 comprising an

identification of data blocks of said second state snapshot S2 differing from data blocks

in said third state snapshot S3 ; and creating a second precedent backup B32 by

copying from said second state snapshot S2 data blocks identified in said second

precedent snapshot difference list S32, said second precedent backup B32 further

comprising said second precedent snapshot difference list S32.

b.   CANCEL claim 43.

c.   Regarding claim 44, change the dependency to claim 42.

d.   Regarding claim 49, the claim shall read as follows (with annotation):

A method of protecting computer data, said method comprising the steps of: acquiring a

base state snapshot S0 of a base state at a time t0; acquiring a first state snapshot S1 of

a first data volume consistent state at a time t1 > t0; acquiring a second state snapshot

S2 of a second data volume consistent state at a time t2 > t1; generating a first

precedent snapshot difference list S01 comprising an identification of data blocks of said

first state snapshot S1 differing from data blocks in said second state snapshot S0;

generating a first precedent snapshot difference list S21 comprising an identification of

data blocks of said first state snapshot S1 differing from data blocks in said second state

snapshot S2; creating a first composite backup C012 by copying from said first state

snapshot S1 data blocks identified in first succedent snapshot difference list S01 and

copying from said first state snapshot S1 data blocks identified in said first precedent

snapshot difference list S21; copying said first succedent snapshot difference list Sol

and said first precedent snapshot difference list S21 into said first composite backup

C012; utilizing the second state snapshot S2 and the first composite backup C012 to

restore the first state snapshot S1 following its deletion; acquiring a third state snapshot

S3 of a third data volume consistent state at a time t3 > t2; generating a second

succedent snapshot difference list S12 comprising an identification of data blocks of said

second state snapshot S2 differing from data blocks in said first state snapshot S1;

generating a second precedent snapshot difference list S32 comprising an identification

of data blocks of said second state snapshot S2 differing from data blocks in said third

state snapshot S3; creating a second composite backup C123 by copying from said

second state snapshot S2 data blocks identified in second succedent snapshot

difference list S12 and copying from said second state snapshot S2 data blocks

identified in said second precedent snapshot difference list S32; and copying said

second succedent snapshot difference list S12 and said second precedent snapshot

difference list S32 into said second composite backup C123.

e.   CANCEL claim 50.

4.   The following is an examiner's statement of reasons for allowance: The prior art of

record, Ohran, U.S. Patent Number 5,835,953. Ohran discloses a system that a static snapshot

of the primary device is taken. (Lines 62-65 of Column 5). Regarding the limitation of a second

snapshot being taken, Ohran discloses a system where a second snapshot is taken when

changes have been made to the system. (Lines 8-12 of Column 6). Regarding the limitation of

creating a list of the changes between snapshot 1 and 2, Ohran discloses a system minimizes

the amount of information that is need to be copied and transferred at the time of the second

snapshot. (Lines 20-25 of Column 6). And regarding the limitation of creating a first precedent

backup, Ohran discloses a system that creates a backup of the information that has changed

between the two snapshots. (Lines 25-27 and 34-40 of Column 6). Ohran does not discloses

the limitation of "acquiring a third state snapshot S3 of a third data volume consistent state at a

time t3 > t2" amongst others. The invention sought for patent would have practical application

in the field of computer data protection in the opinion of the examiner.

5.   Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the

issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons

for Allowance."

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to **Tim Bonura.**

> o   The examiner can normally be reached on **Mon-Fri: 8:30-5:00**.

> o   The examiner can be reached at: **571-272-3654**.

7.   If attempts to reach the examiner by telephone are unsuccessful, please contact the

examiner's supervisor, **Scott Baderman.**

> o   The supervisor can be reached on **571-272-3644.**

8.   The fax phone numbers for the organization where this application or proceeding is

assigned are:

> o   **703-872-9306 for all patent related correspondence by FAX.**

9.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov/. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10.   Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the **receptionist** whose telephone number is: **571-272-2100.**

11.   Responses should be mailed to:

> o   **Commissioner of Patents and Trademarks**

P.O. Box 1450

Alexandria, VA 22313-1450

Tim Bonura
Examiner
Art Unit 2114

tmb
December 18, 2006

SCOTT BADERMAN
SUPERVISORY PATENT EXAMINER